Privileged and Confidential

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Memorandum

Outdoor Air Pollution and Indoor Air Quality:
Resources and Options

1. Background. In many parts of the world, pollutants in outdoor air (and particularly those from vehicle exhausts) are the largest overall contributors to indoor air pollution. A scientific conference in Cairo last year reached that conclusion with respect to the entire developing world. Throughout most of the less developed world, climates are warm, windows are open, vehicles are typically in poor condition, fuels are rarely unleaded, and mechanical ventilation systems are relatively unusual and often badly maintained. The problem is not, however, limited to poor countries and naturally ventilated buildings. Mechanical ventilation systems ultimately rely on intakes of outdoor air and either cannot or fail to eliminate many outdoor contaminants. Whatever capabilities they may have are often diminished by poor maintenance and/or design. As a result, outdoor pollution has a substantial indoor impact virtually everywhere.

Outdoor pollutants differ from location to location, but vehicle exhausts typically represent major sources of benzene, carbon monoxide, volatile organic compounds, and other pollutants which are also associated with ETS. Throughout the less developed world, exhausts are undoubtedly far larger sources of those and other indoor pollutants than ETS. By comparison, ETS is insignificant. This is a finding reached in work done recently at the University of London, and it is likely to be supported by monitoring work in such countries as Chile and Costa Rica.

2. The possible strategy. A greater public awareness of the indoor effects of outdoor pollution is not a "solution" to the regulatory pressures about ETS. Policymakers could easily decide that actions about both are proper ingredients of an overall indoor air strategy. Nonetheless, the industry benefits from any step which places ETS into proper perspective, and which encourages a realistic set of regulatory priorities based upon actual contributions to exposure. Viewed realistically, the major problem in many countries is outdoor pollution, and it is that problem which should therefore be addressed first and most vigorously. Restrictions on ETS will be less attractive to policymakers to the

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extent it becomes clear to them and their constituencies that ETS is merely a scapegoat for the genuine problems. An emphasis upon outdoor pollutants is therefore a potentially significant ingredient of an overall ETS strategy, but that strategy must also include steps specifically addressed to the regulatory threats surrounding ETS as such.

3. Potential resources. Many researchers across the world are conducting work which supports the conclusions described above. Although he is not of course part of any Latin American consultant program, the leading European expert is undoubtedly Professor Roger Perry of the University of London. He is the professor of environmental engineering at Imperial College, the U.K.'s leading scientific academic institution, the founder and head of a center of environmental management, a former advisor to the House of Commons, chairman of a committee to clean up the Pearl River near Hong Kong, and an active participant in the European Union's scientific advisory groups. Among the many sponsors of Perry's center are U.S. EPA, the U.K. Ministry of the Environment, and Philip Morris. Like the others, PM is publicly identified as a sponsor.

PM's role as a sponsor of his center should permit us to approach Perry about possible work on outdoor pollutants in Latin America. He has already shown some public interest in the area, and is apparently now conducting seminars in several South American countries in which he is presenting his findings about the effects of vehicle exhausts on indoor air. He will evidently have contact there with universities and regulators. We cannot, of course, be certain that he will be prepared to assist us or third parties in further work there. We understand, however, that he has done consulting work for many industries, including fuels and detergents.

In Latin America, we have encouraged the work of several scientists who could speak publicly, contribute to studies, and generally assist in discussions of the effects of outdoor pollution. Monitoring studies have been conducted, are in progress, or are planned in Costa Rica and other Central American states, Ecuador, Venezuela, Brazil, Argentina, and Chile. While most of the studies have not focused on the effects of outdoor pollution, they have created expertise which could be used for that purpose. They also provide basic data and lend added credibility to potential spokespeople.

4. Program options. There are many possibilities, and the following are only illustrative.

a. Follow-on seminars and meetings. We have already encouraged IAQ studies and papers in several countries, and it would be sensible to follow those with meetings and events designed

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to provoke media coverage and build additional local contacts. For example, there was a series of useful events in Venezuela some two years ago, and it seems foolish not to conduct follow-up sessions. The focus this time could, however, be upon the consequences of outdoor pollution for IAQ.

b. Follow-on Perry meetings. Although we have not sponsored or participated in Professor Perry's South American work, one option would be to approach him to encourage another round of such seminars and meetings. As noted above, PM's sponsorship of his center should permit us at least to raise the issue. This should be done separately from BAT and the Latin consultant program, with which he probably would not wish to be associated. If he were to agree, such a follow-on program could be accompanied by appropriate press briefings, interviews, etc.

c. Follow-on studies. Efforts to build public understanding of the importance of outdoor pollution in Latin America would be most effective if supported by local data. It would, in other words, be helpful to be able to point to actual measurements in the region's major cities. We should have access to some such data as a result of forthcoming measurements in Chile, but similar measurements elsewhere would be desirable. Conceivably, CIAR could be a sponsor.

The most ambitious program might include an interrelated series of measurements made in such cities as Caracas, Quito, Sao Paulo, and Buenos Aires, all designed to provide a unique regional summary and analysis. Although this should be done outside the consultant program, those involved in the program could thereafter be encouraged to comment upon the summary's importance. Little work has been done on these issues in Latin America, and such a summary would warrant, and should receive, wide press coverage.

A less ambitious and costly approach might include measurements in only one or two of the principal cities, designed to provide illustrative data which could be used through the region. This would be less persuasive than a larger program involving more comprehensive local data, but should still permit reasonable extrapolations to cities in which measurements have not occurred.

We cannot immediately estimate the costs and timing of either option, but they could quickly be developed if there is serious interest.

d. Regional conference. As a final step, we might enourage a regional conference of scientists, politicians, regulators, and concerned citizens to discuss the impact on IAQ of outdoor pollution, especially from vehicles, and possible responses. The results of all of the studies and measurements suggested above

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could be presented, and a comparative discussion of other sources could put ETS into perspective. With proper planning and appropriate local sponsorship, we might attract political figures, regulators and media from across the region.

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